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Interoperability Standards — What Are They & How Do They Relate?

In the year since the Shamrock announcement at Documation '94, there has been a lot of activity in the area of standards that affect the interoperability of document information and document management applications. Besides Shamrock, ODMA and DEN have emerged as potentially important application interoperability standards. In the area of object computing, the Object Management Group has become more involved in compound document architectures, and the battle between OLE and OpenDoc continued to heat-up. The most well-known information interoperability standard, SGML, was given incontestable mainstream credibility with the explosion of HTML and the World Wide Web, in addition to new major new product announcements by Microsoft and Novell among others.

The proliferation of standards can be extremely confusing to someone who simply wants to implement a document management system — do they really need all these standards? If not, which standards should they pay attention to, and when?

We asked each of the consortia (or, in the case of OLE, Microsoft) representing these standards to provide us with a short article on their standard. We supplied each with an outline containing the same set of questions. We asked them to define the standard, and describe: how it fits into the document management process, how it contributes to interoperability, how it relates to other standards, how it is positioned in the market, and what the critical issues for the future are.

This is a crucial area to track if you are following trends in document. In future issues we'll help you sort through how these standards relate to each other as they evolve and become more widely adopted. We would like to thank all the authors for their contribution, especially those who were surprised at how quickly they were expected to get something to us!

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INTEROPERABILITY STANDARDS — *WHAT ARE THEY & HOW DO THEY RELATE*

STRATEGIC OVERVIEW

In this issue we look at six important standards in the document management arena, five from industry consortia and one from a single vendor.

Document management is about putting information into documents, finding it, and taking it out of documents. Because the computer world is diverse, all that putting and taking of information requires standards so that the data remains available and useful.

It is usual to say there are two types of standards, *de jure* and *de facto*. *De jure* standards are set by an authoritative body that has some form of jurisdiction in such matters, for example, the International Standards Organization (ISO). *De facto* standards are standards simply because the vendors have accepted them; PostScript is a *de facto* output standard. But, as many have observed, all actual standards are *de facto* standards: authoritative bodies can declare standards until they're blue in the face, but a standard isn't really a standard until the market has implemented it.

A more useful distinction is between standards that issue from multi-vendor collaborations and those that are promulgated and owned by single vendors. While high-quality work can come from either source, knowing the provenance of the standard tells you something about the curve of its adoption. A standard introduced by an individual vendor, no matter how worthy the standard is, will likely spawn at least one competitor and, quite possibly, an industry consortium for fear — often justifiable — that the standard just happens to favor the approach and capabilities of the originating vendor.

The competitors will claim that it is dangerous to allow a standard to be owned by one particular vendor, but this is balanced by the disadvantages of standards designed by committees. Truly successful standards survive their originating companies in any case. For example, Creative Labs' SoundBlaster specification has become the industry standard for PC sounds; if Creative Labs were to change the baseline spec, the industry would continue writing to the old one and Creative Labs' cards would become non-standard and useless.

The standards considered in this issue fall into three classes.

Information standards define how information is expressed internally so that applications can absorb and reuse the data. Information standards allow different applications to work on the same set of data.

Application standards define a set of operations that a set of software applications may want to perform and a common way of denoting them so that different word processors, for example, can check documents into and out of different document management repositories. Application standards allow you to hook together different elements of document management systems to build a useful and transparent system.

Object standards define the structure of objects. Because objects themselves combine information and functionality, the object standards sit conceptually between the information and application standards. Objects are important within document management systems because document contents do not fit well within pre-defined information types; they are of unpredictable size and richness. And it is very useful for document objects to carry their functionality — for example, the rules for editing them — with them. Thus, object standards have become important in the document management world, even in systems that are not explicitly object-oriented.

It is absolutely critical, as you define your document management system, to decide which standards you are going to implement. This very likely involves deciding on what information you need to track, what functionality your system will provide, how robust and scalable it needs to be, and which particular vendors you are going to deal with. The choice of standards may be the single most important decision you will make.

SHAMROCK

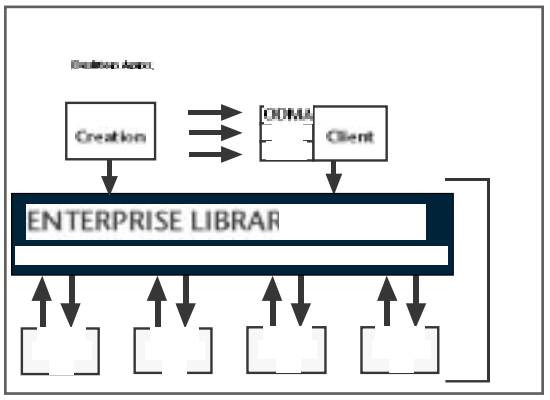
Define The Standard

The Shamrock Document Management Coalition is a group of nearly thirty customers and vendors with a common interest in defining a framework for Enterprise Document Management (EDM). The EDM Framework relates the creation of documents, as well as the communication and distribution of documents with the underlying document management services. In addition to providing an EDM framework, the Shamrock group has published the specification for a common set of Enterprise Library Services (ELS). The Shamrock ELS specification is a C Language application program interface (API) defined to be portable across a diverse set of computing platforms. The objective of the specification is to meet the following user requirements:

- To implement applications that access enterprise library services using a common, non-proprietary interface;
- To allow access to a single EDM system from multiple desktop applications;
- To allow a single desktop application to access multiple EDM systems in a consistent manner independent of the server platform.

What Place Does It Fit In The Document Management Process?

The Shamrock ELS specification provides a robust set of middleware services that is intended to enable universal access to enterprise information repositories and uniform security and administration across the enterprise. These features allow the definition of different document management applications that provide access and administration of information assets in a consistent manner. The API provides a common access and security model for the ELS layer services. The security model facilitates the administration of ELS access to individual users, as well as groups of users.



How Does It Contribute To Interoperability?

The Shamrock ELS specification provides a vendor-independent definition of access, management, and control of document repositories across different platforms. The ELS repository is structured according to an object-oriented data model based on the classes and attributes defined in the ISO 10166 Document Filing and Retrieval (DFR) standard. This data model mimics the real-world environment in which we all work; file cabinets containing drawers filled with file folders of documents, as well as, bookshelves stacked with different books. This class hierarchy will help to bridge the file-centric operating systems of today with the object-oriented, and more user-friendly, operating systems of tomorrow.

Functions within the ELS provide support for both content- and attribute-based search. Content-based search involves inquires based on matching text with content information in a document. For example, with this feature, we can search libraries for documents that mention a particular subject or contain a person's name. Attribute-based search involves inquires based on matching characteristics or properties of the document. This feature allows for a request of documents that have been authored by a specific individual, created before a particular date, or associated with a set of important keywords.

Additional capabilities in the ELS specification provide for versioning of documents within the ELS repository. Document versions are created by checking out a document and subsequently checking it back in with a different version number. Many businesses depend on document versioning. A legal department needs to know that the document it has is the most recent revision of a contract. The staff also may need to track the sequence of document changes that lead up to the current version. More complex document versioning is used in manufacturing sectors such as the aerospace industry, where hundreds of assembly drawings of a commercial aircraft may differ between individual aircraft.

Designed for flexibility and extensibility, the low-level Shamrock ELS API can accommodate diverse applications ranging from adhoc office systems to high-end, mission-critical document management solutions. Workgroups and departments will be able to select from a variety of existing and emerging software components that not only address their specific needs, but also fit into an overall enterprise solution.

How Does It Relate To Other Standards?

The Shamrock group will also extend its activities to identify high-level APIs that will provide application- or environment-specific interfaces between the ELS API and specific application domains. These high level interfaces (HLI) will call the "atomic" functions of the ELS API in order to provide a more "molecular" function for specific application domains. For example, the work of the Open Document Management API (ODMA) group may play a role as a HLI for desktop applications. The ODMA is a simple API for interfacing desktop applications to document management systems. In addition, HLIs may be identified for workflow, or document interchange. Alternatively, applications can make use of the atomic functions of the document management service by making calls directly tot he ELS API. Such applications might include business critical applications whose function depends on the specifically of the atomic level functions of the document management service.

Position In The Market

The Shamrock Document Management Coalition takes a pragmatic approach to defining publicly available specifications for enterprise document management problems. The group is also unique in its customer-driven orientation. The end-user involvement helps to ensure that this initiative will move in a direction that is business-focused and commercially sound. Shamrock is positioned to embrace the integration of emerging technologies such as directory services, mail/messaging, workflow and groupware.

Issues

Information contained in business documents and reference materials must be accessible "at the moment of need." Failure to capitalize on these information assets in a consistent and reliable manner impedes organizational performance, business decisions, work flows, delivery of customer service, cost controls, and the ability to establish metrics to improve quality.

The Shamrock group believes that enterprise document management (EDM) and ELS are necessary extensions of sound information resource management strategy. Traditional strategies have focused almost entirely on improving management of structured data within files and databases. By treating documents as "information assets" within the information resource management framework, customers will protect and better utilize a valuable source of business knowledge within their organizations.

Frank Dawson

Frank Dawson is Co-Chair of Shamrock, and is with IBM Software Solutions.

Open Document Management API

Define The Standard

As document management systems (DMS) continue to progress, it has become apparent that certain standards evolve, especially when given the success of the technology. To briefly examine this theory, one need only take a look at the economics of success for document management (or any other successful technology). As document management systems continue to proliferate, there will be an increase in the number of companies introducing products. As a result of these expanded product offerings, the user community will want some level of conformity. The natural by-product of this evolution is the formation of standards, often initiated by contributing industry leaders and members of the user community.

ODMA is a published and functioning standard which falls into this category. ODMA, which stands for Open Document Management API, has been designed by a collection of industry leaders to heighten the functionality and standardization of document management technology. Specifically, it defines a standard which allows for seamless integration between conforming document management systems and conforming application software.

To date, document management vendors have spent an excessive amount of time attempting to integrate their systems with applications via custom programs, TSRs, macros or a combination of these. The number of applications selected for integration, as well as the level of integration, is normally dictated by the popularity of the targeted application. The document management vendors' integration efforts are often very challenging due to the fact that each new version or maintenance release of a product could negate the integration created for earlier/existing versions. As a result, document management vendors are constantly creating and then recreating integration to accommodate the ongoing releases of applications.

In light of the continued development efforts, it was mutually agreed by all DMS vendors that a better method of linking applications to document management was needed. This method needed to be simple to implement for both document management vendors as well as application vendors. This need was recognized and addressed through a collaborative effort which produced ODMA. ODMA was an initiative that originally took shape with a consortium of vendors in January, 1994. The purpose of the ODMA initiative was straight forward and the design, focused on simplicity. It was to provide a standard that would allow virtually any ODMA compliant document management system to seemlessly integrate with any ODMA compliant application. By adhering to a standard convention such as ODMA, application vendors could revise their products to easily integrate with document management systems. Additionally, document management vendors would no longer be required to write customized integrations for each and every application which was to be managed by their respective systems. ODMA introduced a comprehensive, yet standardized method of allowing Document Management Systems to integrate with ODMA compliant applications.

From January, 1994 to July 1994, the ODMA coalition worked collectively together to define the API. The ODMA 1.0 specification was then officially approved and released on July 1994. In October, 1994, several of the participants demonstrated working products supporting the ODMA 1.0 specification. ODMA represents a collaborative effort supported by competing and complimentary companies who saw the mutual benefits of delivering on a specification such as ODMA.

What Is ODMA And Where Specifically Does It Fit In The Document Management Process?

In defining the ODMA specification, one of the primary objectives was to provide a simple interface for desktop applications and document management systems. The ODMA specification was designed with multiple platforms and operating systems in mind. The actual method of binding the technology to each respective environment is of course platform specific. In the case of Windows, which was the first official release of the specification, a Dynamic Link Library (DLL) was developed along with a corresponding link library. This program is known as the "ODMA Connections Manager". The Connection Manager is a small software module that resides between the ODMA compliant application and the ODMA compliant document management system. The DLL and link library, ODMA.DLL and ODMA.LIB would need to be loaded in the WINDOWS\SYSTEM directory. The purpose of the ODMA Connection Manager is to route ODMA calls to the appropriate provider. In order to provide accessibility into ODMA compliant applications, developers must create the appropriate subkey to the appropriate root level ODMA key in the Windows registration database. Each subkey must be unique, and at this time, developers at WordPerfect are issuing unique subkeys for all vendors/developers supporting ODMA. To ensure that the Connections Manager functions properly, the developers also provided two testing modules, designed for either the application or the document manager. In both cases, the testing module simulates the opposing program to ensure that the ODMA calls are being processed properly.

How Does It Contribute To Interoperability?

As can be observed by the technical details specified above, ODMA is a specification which provided defined interoperability between the DMS and application software. ODMA was not created to go into the connectivity and link layers of the OSI model, but rather, remain higher between the presentation and application layers. ODMA will rely upon other standards to fill in the gaps in the lower levels.

Where Does It Stand In Relation To Other Standards And How Is It Positioned?

As stated previously, the purpose of ODMA was to address the integration requirements between the document management systems and desktop applications. Its functionality was limited to this area and did not touch in areas addressed by other evolving standards. At this time, there are two evolving standards that would serve to complement ODMA, the Shamrock initiative and the Document-Enabled Network (DEN). The purpose of these initiatives are similar in that they both are designed to provide transparent access to information stored in electronic documents or "objects", regardless of the document management repository and location of the information. This breed of software falls into a recently coined term called "Middleware." Its purpose in this context, is to function as an "interpreter" by allowing upper level applications to communicate transparently with back end processes.

There has been discussion of Shamrock and DEN merging and becoming a supported standard which is managed by a standards committee. These discussions are in very early stages and will require considerably more coordination between all contributing parties. In reviewing the offerings of both Shamrock and DEN, it should become apparent that ODMA is focused on the integration of applications and document management systems, while the former two are focused on providing accessibility, security and modularity between the actual document management systems. Consequently, ODMA serves as a complement to these products rather than a competing standard.

Where Does ODMA Go From Here?

ODMA has been recognized throughout the document management industry as an effort of noticeable success. The ability to define and deliver a specification in such a relatively short time frame allows the standard to be adapted in products very quickly and also fills a gap which continued to widen as more applications were targeted for integration with document management systems. ODMA will continue to gain momentum and in the near future, offer added functionality. New functionality, which is scheduled for distribution at the next ODMA conference, will include WorkFlow and imaging extensions. Future implementations will include support for Unix and Macintosh platforms, Win-32 compliance, OLE support and OpenDoc awareness. Discussions have taken place to move the maintenance and development of ODMA to a standards organization such as AIIM. Making this transition will probably be one of the most important issues to be addressed for the ODMA coalition. Presently, the ODMA specification is maintained by Novell's GroupWare division. By moving it to a standards organization, a new level of objectivity will be achieved. This will clear the way for other companies who may be in conflict with Novell, to participate. Additionally, the maintainer of the ODMA specification must establish a certification process to ensure that all companies comply with the specification. Finally, there must be a continued commitment to grow and enhance the specification. Even with these issues identified, ODMA has made an impressive presence and will continue to do so for the foreseeable future.

Russ Edelman

Russ Edelman is Vice President of System Services with ICM.

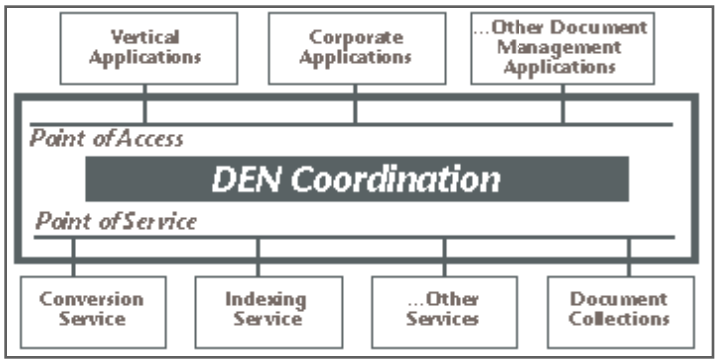
Document Enabled Networking

Define The Standard

Document Enabled Networking (DEN) is an open software framework on which developers can build scalable document management services and applications that interoperate across different document repositories. DEN will provide users with transparent, reliable, and uniform access to information in electronic documents, regardless of where they are stored, the form in which they exist, or the document management system software being used. Because DEN provides common points of access to documents throughout an enterprise, users will be able to find and use documents created in most common office applications simply by searching for document attributes or content.

The DEN Framework

DEN is designed to address the difficulties experienced by most organizations working with document management systems (DMSs) today: incompatibility between different DMS systems, the need to support multiple desktop and network environments, lack of advanced network services for managing documents, and duplication by document management services of network operating system services.



The DEN framework includes specifications, client-server middleware software, and software-development kits. These components support creation of front-end and back-end components that can be installed along with the framework to make complete document management systems and application configurations.

There are two key concepts in DEN: the Information Object and the Document Space.

The Information Object: Introduced in DEN, the information object is a container that captures all that is known about a document: its recorded materials, other resources, and how to find the software needed. Information objects contain the information needed to properly move, replicate, manipulate and present the recorded information of the document.

The information object model enables DEN to deal with the rich variety of situations surrounding the creation and organization of document materials. It supports the coordinated creation, maintenance, and usage of all documents, whether derived from audio and video recordings, real-time data from an information service, scanned pages from publications and manuals, or data extracted from databases and on-line transaction systems.

The Document Space: A document space is a collection of documents together with the information needed to provide uniform access to different document management systems and directories of documents on local or remote file systems. It keeps track of everything that is known about documents in the collection: document contents (and the locations of document components), the applications that created them, their attributes and histories, and anything else that makes each document usable to people and helps to distinguish it from all the other documents in the collection.

DMS Features Supported by DEN

The following features are supported by the DEN framework:

- Uniform, enterprise-wide access to documents, across different document collections, formats, and applications. The same query approach and methodology applies to all document collections.
- Easy integration of text and attribute indexing, so that documents can be found by any combination of text content and assigned keywords or properties. DEN will support text databases and attribute indexes from a variety of vendors for consistent searching capabilities across document collections.
- Document conversions for many popular formats, including ASCII for indexing and rapid browsing. Additional conversions can be included by using the conversion SPI.
- Library services, including check-in and check-out, version control, numbering and revision, annotations and comments, and access control features, initially based on NetWare 4 security.

How Does It Contribute To Interoperability?

DEN contributes to document management system interoperability in a number of ways. For developers and vendors, DEN enables continued development and marketing of advanced document management services using the product paradigms and philosophies already developed, and without the need to duplicate NOS-level services. At the same time, DEN enables both existing and new developers to provide interoperability with each other's products.

For information services (IS) managers, DEN offers the ability to provide complete, controlled document access throughout the organization with fewer support and maintenance issues. DEN-enabled applications will be able to provide automatic conversion capabilities to incorporate existing document libraries (and the application programs used to create them) into the DEN framework. It also provides a clear migration path to future documents and applications so that the value of legacy systems is preserved without compromising future applications.

How Does It Relate To Other Standards?

DEN and Shamrock share goals for standardizing document management architecture. The founders of both groups have been involved in each others' development activities and agree on the importance of developing technical compatibility and identifying ways that they can interoperate with each other to provide powerful and enterprise-wide document management services.

The Open Document Management API (ODMA) is a complementary industry initiative that will enable document management systems to seamlessly integrate with desktop applications. The ODMA specification calls for a client/server API that provides a standard way to execute file operations, such as finding and closing files, through document management applications.

Industry Support

Companies who have publicly stated their intent to join Novell, Inc. and Xerox Corporation in developing DEN as an open industry standard include Documentum Inc., Eastman Kodak Co.'s Imagery subsidiary, Information Dimensions Inc. (IDI), Oracle Corp., PC DOCS Inc. and Verity, qInc. These companies, along with Novell subsidiaries SoftSolutions and WordPerfect and Xerox division XSoft, are now actively involved in further defining the DEN specification, with the goal of providing broader interoperability and connectivity between different document management services, applications and repositories. Other companies are expected to make public announcements of DEN support in upcoming months.

Issues

The first implementation of DEN will be on Novell NetWare. Future versions will support UNIX and other popular network operating systems. In the NetWare environment, DEN will reside as middleware between the operating system software on NetWare 4 servers, as a set of NetWare Loadable Modules (NLMs), and the application software on NetWare clients. DEN, in conjunction with NetWare Directory Services, will enable consistent access to documents located anywhere in workgroup or enterprise systems, including documents on NetWare 3 servers.

DEN middleware will be delivered to end users as part of a new network, a network upgrade, or a new DMS installation. It will also be available for separate purchase.

Ira Scharfglass, XSoft, and Alvin Tedjamulia, Novell GroupWare

Ira Scharfglass is General Manager for XSoft. He is heading XSoft's efforts for Document Enabled Networking with Novell, he represents the division's membership in the Open Document Management API (ODMA) standard group and the Shamrock Coalition. Alvin Tedjamulia is Senior Director of Research and Strategic Planning, Novell GroupWare.

Standard Generalized Markup Language

Define The Standard

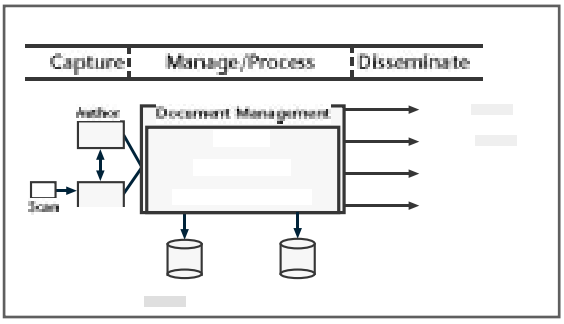
The Standard Generalized Markup Language is an international standard (ISO 8879) for the open interchange of documents and document-based information.

SGML defines a scheme for tagging information in a neutral, non- proprietary format that describes its content and structure. SGML-encoded data contains no application- or platform-specific processing instructions that constrain its use. SGML therefore increases the value of an organization's greatest assets — the knowledge and information in its documents — by making them accessible and reusable across platforms, applications, users, and time. It maximizes the return on the significant investments that we make in

generating and maintaining document-based information. It also gives an enterprise real ownership of its data because it is not locked into a proprietary format that is controlled by a vendor.

What Place Does It Fit In The Document Management Process?

As a data format, SGML applies to information itself rather than to a particular component of or function within the document management process. As such, SGML "fits" the entire process, from capture to information dissemination.



Information can be created in or converted to SGML from other front-end data-capture systems. The document, enriched with structural information through the use of SGML, can now be processed as a collection of information objects that relate to each other. These objects can be stored in a database and managed individually. They can be shared, accessed, and manipulated independently of their use within one particular document. To disseminate information, documents can generated dynamically by pulling SGML objects from the database to fill a document "container" that is appropriate for the target platform. Because SGML separates content from format, presentation characteristics can be applied upon delivery, which offers the benefit of maximum publishing flexibility.

How Does It Contribute To Interoperability?

SGML is one of the most important document management investments that an organization can make because it ensures the interoperability of its information.

Technology changes every eighteen months, which is one of the reasons why we invest in open systems that are based on *de jure* and *de facto* standards. We want to be sure that the hardware and software that we buy today will work with other systems we have now or will have in the future. Investments in open systems platforms and architecture may increase the value of a corporation's physical assets, but those systems are guaranteed to be replaced eventually. The best investment that we can make in open systems is the development and maintenance of open information, which is what SGML enables.

Besides strategic benefits, SGML also offers the tactical advantages of allowing an organization to share the same data across multiple document repositories, thereby supporting enterprise-wide document management. Organizations can choose the products and technologies that are best suited to their needs, while knowing that their documents are interchangeable and accessible to anyone, even across repositories.

How Does It Relate To Other Standards?

As an open, *de jure*, non-proprietary standard, SGML has no direct competition. Confusion about its relationship to other standards occurs in three general areas: with regard to document publishing standards, to HTML (Hypertext Markup Language), and to compound document applications such as OpenDoc.

Until recently, it was common to compare SGML to other *de facto* document processing standards such as the PostScript page description language developed by Adobe Systems Inc. and Microsoft RTF (Rich Text Format). There are several key differences, however, that clearly distinguish them. PostScript and RTF encode documents with processing instructions for rendering their format — their typefaces, positions of characters and graphics in a physical space, and so on. They are highly page-oriented. SGML, on the other hand, encodes documents with intelligence about their structure, not with instructions about their appearance or format. Presentation characteristics for either page or pageless rendering are applied when the information is published, not when it is transported, archived, or

created, as with other publishing standards. This means that the most important aspect of a document — its content — is readily accessible and reusable, which makes SGML an information management rather than a publishing standard. There is another important difference between SGML and publishing standards like PostScript and RTF that is often overlooked. The PostScript and RTF specifications are open in the sense that they are published and freely distributed, but they are proprietary to the companies that develop them. They are vendor-controlled, subject to change in order to protect market share. As an ISO standard, SGML is both open and non-proprietary.

One of the most commonly asked questions in the SGML industry today is how SGML relates to HTML, the format that is used to encode documents for delivery on the World-Wide Web. HTML (versions 2.0 and higher) is an application of SGML, which means that they are complementary, not competing. Business organizations can maintain their data repositories in SGML format, then translate to HTML when the delivery channel is the Internet.

Regarding compound document application standards, SGML data can be one of the types of information objects in a compound document. Again, SGML is complementary to rather than competitive with OpenDoc and OLE.

Position In The Market

SGML is not a "standard in progress." It was adopted by ISO in 1986, which means that it is mature and stable. Businesses can implement SGML with confidence, as it is not a moving target that is subject to extensive and repeated revision.

In its initial implementations, SGML served primarily as a vendor-neutral substitute for proprietary publishing system markup. Today's SGML applications go way beyond publishing, however, and into the broader arena of information management. SGML is being used to manage large-scale databases of information, deliver electronic documents with hypertext facilities across the Internet, transmit news stories via news wires for real-time processing, and even design user interfaces for software products.

In the past, SGML has been referred to as a niche market, characterized primarily by small, moderately-successful independent software and service providers. That is changing rapidly, however, as SGML becomes less of a "boutique" application and moves into the mainstream of the information technology market. Annual sales of SGML products and services are now in the hundreds of millions of dollars, and software giants Microsoft and Novell have entered the market — a sure sign that SGML is a standard to take seriously. As an enabler of document management, electronic document delivery, and Internet publishing, SGML adoption will only accelerate in the future, as these are three areas of technology in which business enterprises are making significant investment.

Main Issues Going Forward

There are two sets of issues that the SGML industry is addressing in order to ensure its continued success and usefulness:

Marketing issues: SGML still suffers from the common misconceptions that it applies only to technical publishing applications and only to companies in the defense community. SGML Open, the non-profit, international consortium of suppliers whose products and services support SGML, and its member companies are working on market education programs that will address these misconceptions and accurately position SGML as an information management standard. The popularity of the HTML application of SGML is also helping companies to understand the value of structured information and is providing a major opportunity to introduce SGML to users who in the past would have thought it inappropriate for their organizations.

Technical issues: The cost of converting legacy data to SGML remains a fairly large obstacle for many would-be users. Conversion can be complex and expensive because of inconsistencies and lack of structure in the source files. Through SGML Open, the vendor community is also working together to enhance existing levels of interoperability among SGML products and services. It is still difficult and expensive for users to do their own SGML systems integration.

Mary Laplante

Mary Laplante is the Executive Director of SGML Open, the non- profit, international consortium of suppliers whose products and services support SGML.

OpenDoc

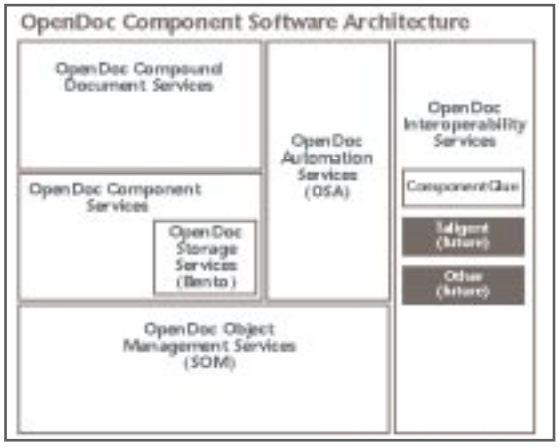
Define The Standard

Today, people are using computers for more and more complex tasks, often involving multiple programs and a variety of media. In addition, they are increasingly working together on computer based group projects over a continually expanding and changing universe of systems and networks — a shift that requires software with new, collaborative capabilities. Further, there is a growing demand for custom software, to meet users' increasingly specialized needs.

Unfortunately, most of today's application not only fail to meet these ends, they also contribute to the growing complexity of working with software. In response to the constant competitive pressure to add features to their products, developers are creating ever larger and more complex applications, which offer little in the way of integration, collaboration, or customization capabilities. The result is paradoxical: as applications become more powerful in terms of features, they also become more difficult to use — and hence less useful to people. In addition, they require more time and effort to develop, maintain, and enhance. (For further coverage of this topic, see *The Gilbane Report*, V.1, N.6.– Ed.)

What's needed is a new software model — one that allows users to access the capabilities they need easily and intuitively, while enabling developers to work more efficiently.

OpenDoc was developed to meet this challenge — reducing the complexity of computing today while simultaneously supporting the collaborative, integrated, and highly customizable applications of the future. Simply put, OpenDoc provides a new model for software interoperability by enabling the creation of distributed, cross platform component software.



OpenDoc is a component software architecture that allows independently developed components to work together in the same window.

OpenDoc is an open system and CI Labs is a consortium to provide access to the technology. CI provides five technologies to make it possible to implement OpenDoc:

The OpenDoc Component Software Architecture provides the interfaces that allow independently-written software to work together within a single document.

The Distributed System Object Model provides the default object request broker upon which OpenDoc is built. It is an implementation of the CORBA standard.

Bento implements a container storage system which is used to store the persistent information from an OpenDoc "part" (component).

The Open Scripting Architecture is scripting-language independent and allows you to define events and send them to a specified target. It's the plumbing that allows a part to open itself and be driven by scripts and other components, not just by humans interacting with a GUI.

Component Glue is the under-the-covers software architecture that enables seamless interoperability with OLE.

What Place Does It Fit In The Document Management Process?

OpenDoc cleanly separates how documents are stored from how they interact with the user. The standard has built-in support for multiple drafts a document as a simple versioning system, but this is only the start of what is possible.

Vendors can extend the OpenDoc storage subsystem to implement whatever access controls and tracking that they desire without having to rewrite part handlers (the software that actually displays components for use). This separation of user interface from storage allows custom document management systems to be implemented (relatively) cheaply; one only has to implement the functionality specific to the management of documents; the user interface comes along for free.

How Does It Contribute To Interoperability?

The OpenDoc storage subsystem enables the clean sharing of documents independent of platform. OpenDoc allows users to focus on their documents instead of on applications. The data from all those different parts can be integrated in a single document.

How Does It Relate To Other Standards?

OLE:

One of the base OpenDoc technologies is "Component Glue," which allows OpenDoc Parts to transparently be embedded in OLE containers, and OLE parts to be embedded in OpenDoc containers. This package means that one does not have to choose either OLE or OpenDoc; one can have the best of both worlds.

Developers can make use of the powerful OpenDoc interfaces to ease their development path; people who have developed using both systems have referred to OpenDoc as a better way of developing OLE parts.

End Users can freely mix OpenDoc and OLE in a single "document," freeing them from having to pick one system or the other.

CORBA:

OpenDoc is one of the first major software systems that depends on CORBA for all of its public interface definitions. All of OpenDoc's interfaces are defined using IDL (the CORBA Interface Definition Language), and a version of DSOM (IBM's Distributed System Object Model) is available from CI Labs for platform vendors.

OpenDoc is being proposed to the OMG (Object Management Group, the people who defined CORBA) Common Facilities Task Force for adoption as a standard set of OMG interfaces.

Position In The Market

There are four platforms with announced development going on: Macintosh, OS/2, Windows, and AIX (Unix). The first three platforms have all had several developers releases and are slated to ship sometime this calendar year. The AIX implementation is scheduled to have its first developers release around the middle of this year.

OpenDoc is in the "adoption" phase, where vendors are evaluating it to see if it meets their needs. However, it is the only open solution for cross platform component software.

Main Issues Going Forward

- Continue to sign up developers.
- Continue to work with developers to standardize formats and automation suites for additional types of data.
- Enhance cross-platform distribution infrastructure.

Neil Katin

Neil Katin is the Acting Chief Technical Officer at Component Integration Labs.

OBJECT LINKING AND EMBEDDING

Define The Standard

(OLE) Object Linking and Embedding, unlike the other standards discussed in this issue of *The Gilbane Report*, is proprietary. It is the invention and property of Microsoft. It is, however, important because Microsoft is making it a *de facto* standard for any application running on Windows. (Microsoft has brought it to the Macintosh, and hopes that in the future, software components based on OLE will be able to operate across UNIX, VMS and MVS.)

OLE is "object-enabling system software" that makes objects reusable in different applications, regardless of their source. It is based on the Component Object Model (COM) which defines a common programmatic interface for objects so that applications can communicate with objects independent of the application that created them. For example, a chart created by a spreadsheet can be embedded in a word processor without the word processor knowing anything about the spreadsheet application ahead of time; it merely has to know how to communicate with an COM-defined object.

OLE is a set of services built on top of the COM. These include high-level services such as enabling an OLE object to be dragged and dropped from one application window to another. They also include OLE Automation which allows an application to expose functionality to other applications, and Visual Editing which lets a user edit an embedded object without switching to a different window; all of the tools required to edit the object (menus and tool bars) appear in the containing window. OLE also includes low level services such as persistent naming, hiererarchical storage and a notification mechanism.

Where Does It Fit In The Document Managment Process?

OLE enables developers to create integrated applications for manipulating documents and data. It enables applications to share data and have it update dynamically; the chart in your word processor embedded from a spreadsheet will update when the spreadsheet updates.

Presumably, Microsoft would like COM to be the standard object model for every type of object, including document objects managed by an object-oriented document management system.

How Does It Contribute To Interoperability?

Because it is a well-defined and extensible standard, OLE enables a high degree of interoperability among applications — a capability instantiated by many applications today. Because it is object-based, not only is the data shared but so is the functionality of the originating application.

How Does It Relate To Other Standards?

OLE and OpenDoc are, put bluntly, competitors. Both enable compound documents to include objects from other sources. In part because OLE is the property of a single vendor, its implementation is ahead of OpenDoc's; OLE is at release level 2.0 whereas OpenDoc has yet to ship.

OpenDoc has agreed, however, to make OpenDoc "parts" (components) fully interoperable with OLE.

Position In The Market

OLE is no more dominant than Microsoft Windows, which is to say that it is dominant. Vendors of Windows-based products support OLE if they support any linking mechanism. Over 500 applications currently support OLE.

There may be room for OpenDoc as well, but it is certain that OLE is going to succeed within the Windows environment.

Main Issues Going Forward

Microsoft needs to bring OLE to UNIX, having shipped it on the Mac in August. Digital Equipment and Microsoft are integrating the COM technology with Digital's Object-Broker to allow OLE objects to interoperate with UNIX and VMS. A few weeks ago Bristol Technologies demonstrated OLE running on UNIX.

In addition, Microsoft has sent out to 5,000 developers early-release copies of a version of OLE that supports distributed objects — OLE working across a network. This is very important if OLE is to be more than a desktop convenience.

In Windows 95, Microsoft plans on OLE being the interface not only for applications interoperating with one another but for applications to interoperate with the operating system. In Windows 95 and in the next generation of Windows NT ("Cairo"), the user interface will reflect the object-oriented nature of the operating system with features such as "property sheets" for files and other objects.

David Weinberger

Common Object Request Broker Architecture

Define The Standard

OMG is dedicated to producing a framework and specification for commercially available object-oriented environments. The Object Management Architecture (OMA) provides an architecture with terms and definitions upon which all supporting interface specifications are to be based. Part of this architecture is a Reference Model which classifies the components, interfaces, and protocols which compose an object system into four key areas:

- The **Object Request Broker** enables objects to make and receive requests and responses in a distributed environment.
- **Object Services** are a collection of fundamental services (interfaces and objects) that provide basic functions for using and implementing objects.
- **Common Facilities** are a collection of higher level services broadly applicable to many applications or high value capabilities for specific domains or vertical markets.
- **Application Objects** are objects specific to particular commercial products or end user systems.

The initial focus of the OMG effort was the Object Request Broker, commercially known as CORBA (Common Object Request Broker Architecture), which provides the basic communication channel allowing objects to interact and provide system services. Since all object behavior is defined in terms of messages exchanged among objects, the communication protocol defined by the ORB is in effect the grammar for all other OMA specifications.

The most important feature of the CORBA specification is its Interface Definition Language (OMG IDL). The IDL language is used by applications to specify the various interfaces they intend to offer other applications via the ORB layer. Applications may make use of this interface specification information to access local or remote services in both a static (compile-time optimized) or dynamic (more flexibility) fashion. If the ORB specifies a system's grammar, Object Services (commercially known as CORBAservices) represents its most basic vocabulary; the essential system services needed to create an object, introduce it into its environment, use and modify its features, etc. These services, bundled with every ORB, constitute the basic enabling technology of an OMA-compliant software system.

Common Facilities (commercially known as CORBAfacilitities) is the third area of the OMA to be defined. By definition, Common Facilities fills the conceptual space between the enabling technology defined by the ORB and Object Services and the application specific services which the OMA labels "application objects". Application Objects, while critical to the overall architecture, do not fall within the standardization process.

In general, Object Services, Common Facilities and Application Objects all intercommunicate using the ORB. Objects may also use non-object interfaces to external services, but these are outside the scope of the OMA.

What Place Does It Fit In The Document Management Process?

The OMA provides numerous services that support the inclusion of object-based compound document architectures and facilities. The OMA was designed to provide basic mechanisms for objects to painlessly interact in a seamless, heterogeneous environment offering great benefits to compound document management. Yet it is within the Common Facilities where OMG standardization work for compound document management will evolve. (An RFP was released to the industry on September 13, 1994 for a Compound Presentation Facility and a Compound Interchange Facility. Submissions are due by February 20, 1995.)

Common Facilities include specifications for higher level services and vertical market specialty areas. Some general purpose examples of Common Facilities include Email, printing, and compound documents. These types of Common Facilities are needed in most application domains. In addition, there is activity in defining vertical market technology requirements including geospatial data processing, patient record management for healthcare, and financial accounting systems.

The initial set of Common Facilities identified to date are as follows:

- *User Interface* - makes an information system accessible to its users and responsive to their needs.
- *Information Management* - covers the modeling, definition, storage, retrieval, management, and interchange of information.
- *System Management* - covers the management of complex, multi-vendor information systems by service providers.
- *Task Management* - covers the automation of work. This includes automation of both user and systems processes which operate as part of the information system.

The following facilities have been identified as being particularly relevant to compound document management:

- *Compound Presentation Facility* - should provide a framework for sharing and subdividing a display window into multiple 'parts'. These parts may be peers of each other or may in turn be embedded into other parts. This facility maps to the 'display' portion of a compound document architecture.

- *Compound Interchange Facility* - should provide a framework for the storage and interchange of data objects, specifically to support facilities like the Compound Presentation Facility. The facility roughly maps to the persistent storage subsystem of a compound document architecture. Considerations include the binding of data objects to a particular presentation manager, the annotation of these data objects with additional properties, the conversion of data objects, the exchange of data objects, and a linking facility to pass information from one object to another.

How Does It Contribute To Interoperability

The OMG's central mission is to establish an architecture and set of specifications to enable distributed integrated applications. Primary goals are the reusability, portability, and interoperability of object-based software components in distributed heterogeneous environments. To this end, OMG has already adopted over ten specifications based on commercially available object technology designed for distributed computing environments. All specifications in support of Common Facilities must also adhere to the OMG's central mission.

How Does It Relate To Other Standards

OMG enjoys close liaison relationships with other industry consortia as well as governmentally-sanctioned standards bodies around the world. Sample consortia OMG works closely with include X/Open, OSF, the X Consortium, POSC, OGIS, and others; among sanctioned standards bodies, OMG has official C Liaison Status with ISO JTC1 subcommittees SC21, SC24, and SC29. The Open Distributed Processing Working Group, ISO/IEC JTC1/SC21 WG7, currently has an open work item to raise OMG IDL to the status of International Standard. OMG's Liaison Subcommittee, chaired by Dr. Jon M. Siegel, maintains the formal part of the relationships, while individuals representing OMG member companies maintain the flow of technical information and close contact which makes the relationships beneficial for all involved.

Position In The Market

With over 500 member companies, OMG is the largest software development consortium in the world. The members of OMG have a shared goal of developing and using integrated software systems. They believe these systems should be built using a methodology that supports modular production of software, encourages reuse of code, allows useful integration across lines of developers, operating systems and hardware; and enhances long-range maintenance of that code. Members of the OMG believe that the object-oriented approach to software construction best supports their goals. Major vendors supporting OMG specifications include Sun Microsystems, Hewlett-Packard, IBM, Digital Equipment, Novell, etc.

Issues

Practical implementations of object-oriented and client/server technology have just recently begun to escalate. Rate of adoption of OMG specifications will be dependent on industry commitment to distributed computing technologies and an increase in supporting tools and environments.

Lydia M. Bennett

Lydia M. Bennett is the Director of Marketing, Object Management Group.

SGML Open Update

When SGML Open was founded in March of 1993, it promised to bring the SGML vendor community together to help settle some technical issues preventing genuine interoperatiblity and to help centralize the marketing of SGML into commercial markets. How well has the consortium done since then?

The Gilbane Report concluded at the time: "By promoting a standard vocabulary through which to describe SGML features and compare products, and by identifying issues that are best addressed by the SGML community as a whole, this consortium can foster stable growth and thus reduce risk for all companies that need open information." While stable growth and reduced risk are goals yet to be fully achieved, the consortium has provided a very valuable forum for addressing cross-vendor interoperability issues. Its marketing efforts — acting as an information clearing house and encouraging the commercial adoption of SGML — have been slower in taking off.

The consortium had 33 members when it was first launched. Since that time, all have been retained (except two who left the SGML market) and the membership is now in the forties. Recently Novell has joined in addition to Wordperfect who had been in the original consortium. Virtually every SGML software vendor is a member of the organization with the very notable exception of Microsoft whose SGML product — SGML Author for Word — has not yet officially shipped. (Microsoft Encarta is an SGML application, so the Giant of Seattle could join as a user if it chose to.)

Another difference between the membership then and now: At the time of the launch, no members had actually ponied up the dues. Now the members are paying for the privilege.

The leadership of the consortium has evolved. Of the initial "acting officers," only Yuri Rubinsky of SoftQuad remains; he is chair. The president is Pam Gennusa of Database Publishing Systems, formerly the chief marketing officer. Perhaps the most important personnel change was the hiring of the organization's only full time employee, executive director Mary Laplante.

The consortium from the beginning established both a technical and a marketing track.

The technical track, chaired by Paul Grosso of ArborText, introduced its first resolution, TR 9401 on entity management, in July 1994. According to Laplante, the vendors to whom it applies have already adopted it and it has been incorporated by James Clark into his public domain SGML parser. There are also committees on parser compatibility issues, tables interchange, style sheet interchange, and on multinational character sets.

The Gilbane Report coverage of the founding of SGML Open (Volume 1, Number 2), while very positive about the group's potential (Frank Gilbane, editorial director of this Report, is a founding member of the group's industry board of advisors) expressed concern that the technical work of the group might result in a "lowest common denominator" approach that supports all vendors' implementations at the cost of flexibility for meeting end user needs. For example, by adopting one particular model for tables, the consortium would specify a solution that is inappropriate for some applications. This has not happened. The work of the technical committees has been sufficiently flexible and quite solid.

The marketing track, now chaired by Kent Summers of EBT, has begun moving ahead as well. The group sponsored its first educational seminar in February, in Northern California (in association with the Northern California SGML Users Group). They will also be publishing their first case study at Documation, focusing on the Administrative Office of the Courts of Utah. A new committee on international operations has been formed to make sure that SGML Open is global in its scope, especially since about 20% of the membership is European and 16% is Canadian.

It seems the marketing efforts were slow off the mark primarily because of resource issues, including vendors' commitment of the required resources and operational issues. With Laplante and Summers driving now, the marketing committee seems to be now on track, although SGML Open is hardly well-recognized yet as the market's source and center of all SGML information. Has any vendor found its individual marketing burden lighter because SGML Open is around? Has the consortium promoted "a standard vocabulary through which to describe SGML features and compare products" as we hoped in our original coverage? Not yet. But we are encouraged.

To its credit, the consortium is aggressively taking advantage of the most important current marketing factor driving SGML: the adoption of HTML as the standard for Mosaic-browsable documents on the Internet. Says Laplante, "There's so much interest in SGML thanks to the Internet and HTML — which some of us look at as a gift from the marketing gods — that it's hard to keep up with the opportunities." The group has successfully steered clear of the temptation to pooh-pooh HTML as "brain dead SGML," as one SGML purist put it early on.

Quite the contrary. In October, at the World Wide Web conference of which it was a co-sponsor, the consortium announced the formation of a new technical committee on SGML and HTML. In fact, members of the committee have worked to help ensure that HTML 3 is an SGML implementation. The consortium has also set up its own Web site (http://www.sgmlopen.org) which in a typical week has over 4,000 visits.

The consortium has sucessfully avoided a narrow, technical view of SGML as an interchange format and has seized on the other two forces driving the market, in addition to the Internet: electronic document delivery and the new view of document management in which documents are understood to be a corporate information asset. Says Laplante, "Document management and information systems are converging and information managers hear the wake-up call."

She says that the competitor members have been working well together within the confines of the consortium: "I've been really impressed at the level at which the companies cooperate. But that's because if we don't make these products work together better, easier to adopt, and less cost-intensive, this industry won't achieve its full potential."

For the future, Laplante wants to build the membership even further, especially to include some hardware vendors, a category of member conspicuously absent from the membership roles. There is also an endless amount of marketing that could be done. We encourage continued focus on building SGML Open into an information clearing house and into a proactive marketing power house within commercial markets.

SGML Open seems to have passed through its founding stage and is gaining strength as a vibrant and stable organization of genuine use to the SGML community of vendors and users. The important question is, of course, whether it can reach dramatically beyond those already convinced by the legend of SGML to the commercial market. That is its real objective.

Documation '95 Announcement Previews

A number of new products are expected to be announced or previewed at the Documation Expo.

Here is a brief view of some of them. Look for more details in upcoming issues.

Document Sciences Corporation

Document Sciences Corporation will be showing CompuSet, a new document automation architecture. They'll also be introducing two new CompuSet sub-systems; Document Library Services (DLS) and Document Viewing Services (DVS) as well as introducing compatibility with CD-ROM archived technology and popular on-line document distribution systems.

InContext

InContext Software Developers Kit will be demonstrated in the InContext exhibit. The new product features a C++ API which allows customization at all levels: from adding a menu item to check a file out of a document database, to incorporating dynamic DTD-specific help facilities.

Novell

Novell's Documation '95 Expo exhibit will feature WordPerfect SGML Edition and Convert Perfect. The WordPerfect SGML Edition layers the SGML tagging and validation system, along with a new layout generation process on top of WordPerfect 6.1 for Windows. ConvertPerfect 2.0 is a conversion tool that supports document interchange to and from the Open document Architecture (ODA) format, FOD26.

Texcel

Texcel will be announcing Information Manager, a comprehensive suite of applications for collaborative authoring, electronic review, document assembly and workflow. It is based on an SGML repository that is able to track and manage the individual elements of documents.

XSoft

The XSoft division of Xerox will be conducting preview demonstrations of a new technology, code name: Chrystal. Chrystal is a document component management technology designed to enable organizations to leverage their SGML investment by dramatically improving access to information.

Industry News

Instant Trends

If all you had to go on were the news reflected in this issue of *The Gilbane Report*, you would see the following trends:

1. Everyone is integrating with Notes.
2. Everyone is integrating with the Internet.
3. The really smart people are integrating Notes with the Internet.

There is also much creativity about what to call software so overdue that it is being released in a pre-beta version. (*The Gilbane Report* suggests that it be called "leta," which rhymes with "beta.")

OpenDoc and Fresco Become Pals

Component Integration Laboratories and the X Consortium have announced that they have exchanged memberships so that they can work together on making OpenDoc and Fresco interoperable. Fresco is an object-oriented toolkit and an API for developing graphical and textual applications.

Notes Notes

Perhaps because of Lotusphere (formerly "Lotus-phobia"?), there have been an unusually high number of announcements concerning Notes.

Folio announced Fusion which integrates Folio VIEWS and Lotus Notes. The software lets Notes users use Folio VIEWS for archiving and retrieving Notes information, searching withing Notes databases, and publishing from Notes. It should be available by press time. It is being distributed by GroupQuest Software.

ViewStar will support Lotus Notes: Document Imaging 2.5, enhancing ViewStar's Integration Toolset for Lotus Notes.

Apple is bundling Notes Express with "appropriately configured" Apple Power Macintoshes and PowerBooks. The software brings some of Notes' abilities to access, track, share and organized information to those who only occasionally plug into a network.

Carthage International will use Verity's Topic Agents for Lotus Notes in the next release of its customized news service so that Notes users can create personalized views of the news.

Trinzic has announced NotesPump, a tool that lets Notes users retrieve information from RDBMS's.

Lotus itself had news: InterNotes, a product line that integrates Notes and the Web will enable Notes users to publish Notes applications to the Internet and to access Usenet News from Notes. John Landry, Lotus's chief technology officer, said in the press release that the product line is "way cool."

Lotus also announced the opening of its Web site (http://www.lotus.com) created and managed by a beta copy of InterNotes Web Publisher.

Newspaper On Line

The San Jose Mercury News is now publishing all its news and editorial text on the World Wide Web. The news is updated throughout the day. Readers can click on headlines and summaries to see the full articles. The bottom of most pages has advertisements, complete with hyperlinks. The newspaper has been on-line on America On Line since May 1993.

Open Text Releases Version 5

Open Text has released Open Text 5, the latest version of its suite of tools for doing full text searches of large text bases and for viewing the results. Open Text 5 can index text in more than 40 file formats, including SGML and HTML. Open Text claims their search engine does not slow down even as the database roams into the multi-gigabyte range.

Kodak Prints On Demand for IBM

Kodak Imaging Services will be printing 750 million pages a year for IBM, making it one of the largest demand printing operations in the world. Kodak will print software manuals for IBM customers worldwide, delivering them on paper and electronically.

ViewStar Announces Insurance Software

ViewStar has released PolicyWorks that automates the filing, copying, storing and moving of insurance documents. The system manages typical insurance industry transactions through a folder-oriented user interface.

Action Technologies Adds Workflow to Saros

Action Technologies ActionWorkFlow DocRoute — the result of a collaboration between Action and Saros — adds workflow management to the Saros Document Manager. The integrated products provide version control, query services, security, intelligent routing, notification, and review and approval automation. The software is available for Windows, and costs US$2,495 for the server and US$195 for a single workstation, independent of the cost of Saros Document Manager.

Sybase Forms Net Commerce Unit

Sybase has formed a business unit to provide software for buying and selling goods and services over networks. The New Media Division will expand Sybase's current offerings in deals with telecommunications and cable companies, and will develop products for the Internet and commercial on-line services.

Mecklermedia Introduces Weekly Web Publication

Mecklermedia is launching WEB WEEK, a weekly devoted to World Wide Web development. It will provide business-to-business coverage of news and products. It will be a tabloid with an expected rate base of 25,000 copies by mail. It will also be on the MecklerWeb (http://www.mecklerweb.com). According to Alan Meckler, chair, "... advertisers will be able to take advantage of sponsorships of various sections of WEB WEEK that will appear simultaneously on MecklerWeb." The press release claims it will be "the first-ever publication devoted to World-Wide development." (The editors of Inter@ctive Week and Internet World have not expressed their opinion yet.)

Dataware Links in Databases

Dataware Technologies has announced Total Recall, an API that allows any of the major RDBMS's and 4GL's to link with Dataware's full text management system. The API provides access to structured data, text, images and multimedia. Ship date and price were not announced.

Sony CD Plays Music and Data

Sony Electronics has announced a Walkman that plays CD-ROM's as well as audio CD's. Because it is the same size and weight as a normal portable CD player, it may appeal to those who travel with laptops. It is powered by two AA batteries that deliver six hours of audio play and one hour of CD-ROM play. (Doesn't it depend on how loud your data is?) The version that plugs into a parallel port will list for US$379.95, while PCMCIA versions will cost more. The first models will be available sometime in spring.

Silicon Graphics Bundles Web Software

Silicon Graphics will bundle Web authoring and security software from Netscape Communications with its WebForce workstations (Challenge S and Indy). The authoring software includes an HTML editor, digital media tools, and tools for creating movies. It also includes the Netscape browser and Netsite server software. Prices start at about US$11,000.

Redlining Add-on for Acrobat

Software Partners has launched an add-on to Adobe Acrobat that enables users to edit PDF files, adding comments, graphics and multimedia attachments. It is designed for workgroup review of documents. The product, Re:mark, costs US$130 and is available under Windows; a Macintosh version is in the works.

Bitstream Puts the Fonts Back into the Web

BitStream intends to integrate its TrueDoc technology into Spyglass's Mosaic browser, enabling readers to see the original fonts even if they are not installed on the reader's system. This integration is purely at the demonstration stage now and no date has been announced for its release.

Multimedia Authoring Announcements from Authorware and Autodesk

Macromedia has announced the Authorware 3.0. The upgrade adds portability between the Macintosh and Windows, hyperlinks between multimedia elements, better integration with Director, and performance improvements. It will ship in April, and will cost $4,995 for a new copy or $995 to upgrade from Authorware 2.0.

Autodesk has previewed its multimedia authoring technology. In the sample application demonstrated, the unnamed product showed realtime updating of information and multiple and concurrent multimedia views of the same data in various forms. The authoring technology was acquired from Mediashare.

Oracle Provides Links to the Web

Oracle will provide tools for linking web servers to Oracle 7.1 databases, enabling secure electronic commerce over the Internet by encrypting data via its current Secure Network Services software. The toolkit is available for free on the net.

In addition, the next release of Oracle Book 2.2, will have an HTML converter so that Oracle Book documents can be distributed over the Internet.

Finally, starting in April you'll be able to send a document to an Oracle web site and have it returned to you in proper HTML form as a free service.

Nynex Yellow Pages On Line

Nynex is putting all 280 of its New York and New England Yellow Pages on to Prodigy. Users can "drop into" advertisers to get more information, eventually in multimedia form. There are currently 1,500 advertisers.

Apple and Microsoft Announce Delays

Apple has delayed its contribution to OpenDoc until the fall because it has turned out to be harder than anticipated to convert Apple's object library to IBM's System Object Model which serves as OpenDoc's linking mechanism. Apple will release a version of the OpenDoc API's in May so that developers can start building OpenDoc applications; this software is pre-beta, which Apple has dubbed a "development seed." OpenDoc is being developed by Apple, IBM and Novell.

Microsoft has slipped Exchange from the middle of the year until fall. Beta 1 (which Microsoft — apparently employing the countdown method of numbering releases — used to call "Test Release 3") has shipped to 400 users and developers. Microsoft is not setting a firm date for when it expects the actual product to ship.

Multi-Vendor Web Authoring Package

ITSolutions, Canon, and Pages have introduced the Netcity Workstation, a WWW authoring system. Pages' WebPages software lets authors create HTML documents without knowing HTML markup. (Information is available at http://www.pages.com/). The workstation is based on Canon's object.station 41. Pricing starts at under US$10,000.

SmartPaper from Xerox

Xerox has made available to developers early versions of a new way to encode machine-readable data on paper. DataGlyphs appear as a gray pattern on a page, compressing into a small area what may be thousands of characters or other data. The glyphs can be incorporated into standard document design elements. The SmartPaper technology decodes the information in the DataGlyph.

Help for the Wired School Child

Infonautics' Homework Helper — a multi-gigabyte library of reference books, newspapers, magazines and literature on Prodigy — is adding full text search capabilities from ConQuest Software. The ConQuest software allows a user to enter search queries in something like ordinary English. The system will use Oracle7 as its database, providing precise auditing of the usage of the online materials so that authors of copyrighted work can be compensated.

Novell Licenses Netscape

Novell has licensed the Netscape Web browser for inclusion in its products. The two comapnies see this as a strategic relationship. Nevertheless, Novell is expanding its development commitment to producing its own "next generation" browser, code-named "Ferret." Ferret apparently is part of Novell's strategy to create an "information dial tone" to link just about all on-line information sources, including cable television, telephone, and the on-line service providers.

OMG Aims for Internationalization

The Object Management Group has put out RFPs to help it internationalize the CORBA standard so that it supports local languages and local conventions for expressing numbers, currencies, dates and times. It has also issued an RFP for IDL Type Extensions that will enable CORBA to integrate extended characters.

WordPerfect Supports the Web, Announces New SGML Edition

Novell has announced WordPerfect Internet Publisher for Windows, a free add-on that outputs HTML from the word processor, available at http://www.novell.com. Novell also announced a "Pro" version that costs $49. The products are expected to be available early in the second quarter of this year. The product provides a template that guides the author through the process of creating an HTML document, and a filter that converts it into HTML. A toolbar interface provides access to hypertext linking and graphics.

In addition, the software comes with Netscape Navigator, integrated with Envoy so that users can publish documents on the Web without converting to HTML.

WordPerfect also announced WordPerfect SGML Edition, a full teatured SGML editing capability built into WordPerfect. There is even a FOSI-like style sheet capability. This is not a new version of IntelliTag, but a new product. Check it out at Documation.

Buzzer of the Month

This month's coveted award for the best use of buzz words in a press release goes to Novell ("Novell to Ship New OpenDoc Developer Release"):

"The OpenDoc for Windows DR1 also contains feature-complete support for IBM's System Object Model (SOM). SOM supports multiple programming languages and complies with the Object Management Group's Common Object Request Broker (CORBA) standard for distributed object messaging. SOM-based OpenDoc for Windows DR1 will enable virtually all developers to create software components that can work together on a single desktop, as well as provide them with a gateway to distributed cross-platform component software development."

People News

Action Technologies Inc. has appointed **Charles Pendell** vice president of sales. Kodak has appointed four vice presidents to marketing position in its Digital & Applied Imaging business. **Mark Patton** is now vice president of worldwide sales and marketing. **Frederick Geyer** is vice president, systems/solutions integration. **Ronald Dickson** is vice president, worldwide marketing communications. **Richard Dyer** is vice president, worldwide channel development. Sybase has appointed **Russell Werner** as vice president and general manager of its new New Media Division. **Edward J. Zander** has been appointed president of Sun Microsystems Computer Company (SMCC). Zander had been president of Sun's software subsidiary, SunSoft, for the past four years. **Thomas F. Kelly** has been promoted to the position of executive vice president and chief financial officer for Frame Technology.

Calendar of Events

Documation '95. March 7-9, Long Beach, CA. The international conference and exposition of the year for the document management and document computing industry. Covering all aspects of enterprise document management technology, standards, and applications. Co-sponsored by PTM/Charles A. Pesko Ventures, *The Gilbane Report*, the GCA, and the GCA Research Institute. Call (703) 519-8160 or (617) 576-5700, Fax (703) 548-2867, or (617) 576-5708.

Seybold Seminars '95. March 27-30, Boston, MA. The annual conference where the publishing technology elite gather. Focus is on pre-press, color, newspaper, and magazine applications with some corporate application coverage. Call (415) 578-6990, Fax (415) 525-0183.

PTM Document Management & Electronic Delivery Seminars. April 3-4, London, UK. These two day seminars are conducted Gilbane Report staff and are managed by Technology Appraisals. Call +44 81 893 3986 or (617) 576-5700, Fax +44 81 744 1149 or (617) 576-5708.

AIIM. April 10-13, San Francisco, CA. The large annual storage and retrieval and document imaging trade show. Lots of hardware. Call (301) 587-8202, Fax (301) 587-2711.

SGML Europe. May 16-19, Gmunden, Austria. The annual European gathering of SGML experts and novices. Call (703) 519-8160 or +44 0793 512515, Fax (703) 548-2867, or +44 0793 512516.

PTM Document Management & Electronic Delivery Seminars. June 19-20, London, UK. These two day seminars are conducted Gilbane Report staff and are managed by Technology Appraisals. Call +44 81 893 3986 or (617) 576-5700, Fax +44 81 744 1149 or (617) 576-5708.

On Demand Digital Printing and Publishing Strategy Conference and Exposition. June 27-29, New York City, NY. The only commercial conference and expo devoted to on demand printing technology and applications. Sponsored by Expocon and Charles A. Pesko Ventures. Call (617) 837-7200, Fax (617) 837-8856.

Topics Covered In Previous Issues

Vol. 1, No. 1.
What The Report Will Cover & Why — An Introduction To "Open Document Systems", And A Description Of The Report's Objectives.
Imaging, Document & Information Management Systems — What's The Difference, And How Do You Know What You Need?

Vol. 1, No. 2.
SGML Open — Why SGML And Why A Consortium?
Document Query Languages — Why Is It So Hard To Ask A Simple Question?

Vol. 1, No. 3.
Document Management & Databases — What's The Relationship?

Vol. 1, No. 4.
Electronic Delivery — What Are The Implementation Issues For Corporate Applications?

Vol. 1, No. 5.
Multimedia Rights & Wrongs — What IS Managers Should Know About Copyrights In The Age Of Multimedia.

Vol. 1, No. 6.
Document-Centered Interfaces & Object-Oriented Programming — How Will They Affect You?

Vol. 2, No. 1.
State Of Wisconsin Legislature TEXT2000 — Reengineering For Document Management.

Vol. 2, No. 2.
Document Management Industry Update — Documation '94 & Other Spring Industry Events.

Vol. 2, No. 3.
Document Formatting Interchange — Why Don't We Have A Solution?

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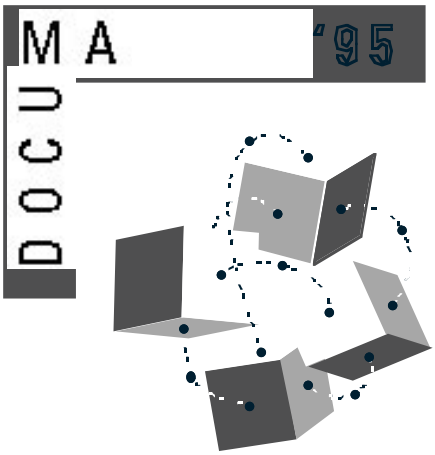

March 7 - 9, 1995 — Long Beach, CA
You may see this issue just in time to hop on a plane for the Document Management industry's big event of the year.

April 3 - 4, 1995 — London
Document Management & Electronic Delivery Seminars.

June 19 - 20, 1995 — London
Document Management & Electronic Delivery Seminars.

June 27 - 29, 1995 — New York
On Demand Digital Printing and Publishing Strategy Conference and Exposition.

Call, Fax, Or Email Us To Find Out More About Events & Companies Mentioned In This Issue

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Letters to the editor are encouraged and will be answered. Mail to Editor, The Gilbane Report, Charles A. Pesko Ventures, One Snow Road, Marshfield, MA 02050 or ptm@world.std.com or APPLELINK:PTM

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